



Effectiveness of Metacognitive Strategies on Procrastination in students of High School female students of Marivan

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ABSTRACT

Academic procrastination are of the most common problems among students that always affect their academic achievement. This study aimed to assess the efficacy of Metacognitive strategies on reducing procrastination in high school female students of Marivan city in 2015-2016 academic year. This study is applied and the method is semi-experimental with pre-and post-test with control group. For this purpose, using available sampling method; 50 students were selected and randomly divided into two groups of experimental and control (per group was 25 students), where the consultant was used. The experimental group received 12 sessions of Metacognitive strategies training package were 45 minutes. Results of the analysis showed that teaching metacognitive strategies can be significant effect in reducing procrastination of students.

Keywords: Metacognitive strategies, Academic procrastination, Female students.

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INTRODUCTION

The desire to know and trying to know and understand are of the inseparable characteristics of human being. Thus, human mind has always been preoccupied with many questions. Here, the question of what a person knows about knowing, and how and to what extent he can have his place, and questions like these have led us to the concept that today in the psychology of learning is called metacognition. Metacognition is key to cognitive ability, which allows people to control their thoughts and reconstruction and plays an essential role in learning [1]. Metacognition is effective in academic performance and academic achievement of students. People who use these strategies can better cope with situations. They will have a better plan for their lessons. This can help to reduce procrastination and anxiety of students. Test anxiety is a common phenomenon in schools and is closely related to general anxiety. However, exam stress has certain features and characteristics that make it isolated from general anxiety. The negative effects of test anxiety on academic achievement have been confirmed in numerous studies [2].

Procrastination is a behavior that would lead to delaying things that has several dimensions in people. One of their dimensions is postponing academic assignments called academic procrastination. It can be defined as the habit of delaying, which is very common among students [3]. Thus, procrastination behavior of the students can cause them not to be able to use their actual performance in the learning process, and thus they fail. Academic procrastination is a common and serious problem among students. Its internal consequences are anxiety; confusion, self-blame, frustration and regret, and its external impacts may be heavy and may damage the progress of the work and education [4]. People who are negligent often do not have time management. Their self-regulation is low, and they try to keep postponing their work. This makes them get into trouble in studies and may fail.

Metacognition is a term defined as recognizing the recognition or knowing the knowing in psychology. Man's reflection on his mental processes, and thinking about one's thinking is called metacognition [5]. The concept is considered as the concepts of theory of mind that has two components generally: one knowledge about knowledge, and the other basing up knowledge. Man's children do not have metacognition before school and do not have the ability to understand the thoughts and feelings of others, and it is after four years of age that they understand the thoughts and beliefs of others affect their

behavior, and that they even may be away from fact. Patients with autism lack the theory of mind and see people like any other object, thus they ensconced in their inner world [1]. Metacognitive knowledge refers to beliefs and theories that people have about their own thinking. Metacognitive experiences include assessments and feelings that people have in different states of their own mentality and metacognitive strategies are responses used to control and change the thinking and help cognitive and emotional self-regulation [6]. Therefore, this study aims to examine the question of whether teaching metacognitive strategies affect the procrastination of students.

MATERIAL AND METHODS

Regarding the purpose, this study is applied, and regarding the running, it is quasi-experimental research with pre-test and post-test with a control group.

The population: The population in this study consisted of all second grade high school female students in Marivan studying in the academic years 2015-2016 who were 1720 people.

Sampling: Since the study is quasi-experimental, and the experimental groups should be trained in metacognitive strategies, the sample was randomly selected. At first, one high school for girls in Marivan (research was conducted on high school students of Andisheh Marivan) was randomly selected, and the students were divided into two homogeneous groups after pre-test. The sample size was 50 where 25 of them were in the experimental and 25 in the control group.

To select the sample, convenience-sampling method was used. After obtaining permission from the Department of Education, the researcher referred to Andisheh high school and discussed it with the school counselor. Counselor introduced a number of students who had disorder in executive functions compared to the rest without their being aware. These students gathered in prayer room of the school in collaboration with the Educational Assistant of the school. In this meeting, the students were given the necessary explanations that this is an academic work, and they were asked to cooperate.

Fifty of these students announced their readiness, and after the pre-test, the researcher identified the subjects and placed them in two homogenous groups of control (n = 25) and experimental (n = 25).

Research Tools

Procrastination Inventory:

To measure the procrastination of the students, academic procrastination scale of Solomon and Ruth Bloom [8] is used. Inventory of academic procrastination by Solomon and Ruth Bloom was developed in 1984 for procrastination in three areas: preparation of assignments, exam preparation, and preparing half-year reporting. The scale includes 22 items that in addition to the 21 questions, six questions are considered to assess the discomfort of being a procrastinator and desire to change the habit of procrastination, so this questionnaire has 27 items. Dehghan [9] used this scale in 2008 for the first time in Iran. The academic procrastination questionnaire examines three components: the first component is preparing for exams that have eight questions. The second component is preparing for assignments that include 11 items, and the third component is preparing for the final paper, which contains eight items.

In the third component, the questions related to end-of-term paper were considered as class research homework for students in Iran and this option was explained for respondents to the scale. In responding to the items, the respondents rate their agreement with each item by choosing one of the options rarely, sometimes, often, or always show where the option rarely gets 1, sometimes 2, often 3, and always receives a score of 4. In this scale, items 2, 4, 6, 11, 15, 16, 21, 23, 25, 23 are scored in reverse. Nikbakht *et al.* [10] have estimated Cronbach's alpha coefficient for academic procrastination as 0.86. For determining the validity of academic procrastination scale, Jokar and Delavarpour [11] used factor analysis and correlation of the items with the total score. In studying factor analysis, the value of KMO is reported as 0.88 and the correlation of items with the total scores of the test is at optimal level and is statistically significant [10]. In his study, Alimard has estimated Cronbach's alpha in academic procrastination as 0.84 [4]. Motii *et al.*[9] have reported Cronbach's alpha value of this scale as 0.86. Cronbach's alpha coefficient for this variable in this study is 0.834.

Treatment process

Treatment protocol of training sessions

Table 1: The content of meta-cognitive strategies training class [7]

Session	Session content
First session	Establishing good relations, necessary and sufficient description about the problem, the causes and consequences, doing pre-test
Second and third sessions	Recalling different metacognitions to create a formulation in order to extract information about the nature and content of the syndrome of obsessive thoughts and compulsive actions

Fourth and fifth sessions	Positive and negative beliefs about rituals, obsessive thoughts, and reviewing compulsive experiences of the past
Sixth and seventh sessions	Extraction of beliefs and dysfunctional evaluation about obsessions beliefs, rituals, and signs of ceremonies stop
Eighth and ninth sessions	Challenging metacognitive beliefs related to obsessive rituals
Session ten	Doing exposure and preventing response and correction of metacognitive beliefs
Sessions eleventh and twelfth	Stopping rituals and creating a new succession plan in order to build trust to memory, reducing doubt of the patients towards herself
Session thirteenth	Doing post-test

Data analysis method:

For data analysis SPSS software, and to analyze the data, descriptive and inferential statistics were used. In descriptive statistics, the indices of table of frequency, percentage, mean, and standard deviation, and in inferential statistics, univariate analysis of covariance ANCOVA were used.

RESULTS

According to Table 2, the mean score of procrastination of students in the experimental group in pre-test was 74.36 and 70.44 in the post-test. The mean score of procrastination of the students in the control group dropped after the metacognitive strategies. The mean scores of control group students' academic procrastination in the pre-test and post-test were 75.12 and 75.20 respectively. As can be seen, the mean scores of procrastination of students in the control group who did not have any training in the pre-test and post-test were nearly identical and unchanged.

Table 2: Statistical description of procrastination of students in the pre-test and post-test separately for experimental and control groups

Variable		Pre-test		Post-test	
		Mean	SD	Mean	SD
Procrastination of students	Experimental group	74.36	13.40	70.44	12.46
	Control group	75.20	9.70	75.12	9.88

ANCOVA was used to test the research hypotheses and before conducting the test, it is necessary to examine the presumptions of using this test.

Table 3: Results Levene's test for equality of variances in pre-test for experimental and control groups

Variable	F test	Degree of freedom 1	Degree of freedom 2	Sig
Academic procrastination	2.729	1	48	0.126

To study the homogeneity of variance of experimental and control groups, Levene's test was used. As shown in Table 3, the value of F in Levene's test for academic procrastination of students is 2.729 and the significance level is 0.126. Since the error value is greater than 5%, it can be said that there is no significant difference between the variance of the two groups, and the dispersion of the two groups is the same.

As shown in Table 4, the value of test for interaction between the group and the pre-test of students' procrastination is 2.346 and the amount of the error is 0.132, which is not significant. Therefore, it can be said that the assumption of homogeneity of regression slopes is not met.

Table 4: The assumption of testing homogeneity of the slope of the regression

Variables	Sum of squares	df	Mean Square	f	Sig
group	17.71	1	17.71	1.056	0.309
pre-exam	5023.88	1	5023.88	299.576	0.000
Group * Pre-test	39.35	1	39.35	2.346	0.132
Error	771.42	46	16.77		
Total	271193	50			

In Table 5, ANCOVA of the effect of holding metacognitive strategies classes on procrastination of second grade high school students is given. In this table, the value of F for the interaction between pre-test and holding metacognitive strategies classes is 11.168 and significance level has been 0.002. Thus, with the probability of error of one percent, we can say that procrastination of the experimental group in post-test and after running metacognitive strategies training for them has decreased significantly compared to the control group, and this result can be generalized to the population. In other words, it can be said that holding classes of metacognitive strategies has had a significant influence on the reduction of students' procrastination. Thus, the research hypothesis can be confirmed, and it can be said that training metacognitive strategies is effective in reducing procrastination. Its adjusted eta squared is equal to 0.192. This number indicates that the interaction between pre-test and running metacognitive strategies has explained 19% of changes in post-test of students' procrastination.

The distance between the pre-test, post-test, and training metacognitive strategies for students has been 45 days, and metacognition strategies have been taught to students in 12 sessions of 45 minutes.

Table 5: Analysis of covariance of holding classes of metacognitive strategies on procrastination of students

Variable	Source of changes	Sum of squares	Degree of freedom	Mean Square	F	Sig	Adjusted eta squared
Procrastination of students	Group	192.652	1	192.652	11.168	0.002	0.192
	pre-test	5263.03	1	5262.03	305.039	0.000	
	Error	810.768	47	17.25			

DISCUSSION AND CONCLUSION

To test this hypothesis, the univariate analysis of covariance is used. F-value for interaction between the pre-test and holding classes of metacognitive strategies is 11.168 and its significance level is 0.002, so with the probability of error of one percent, it can be said that holding classes of metacognitive strategies has had a significant effect on reducing procrastination of students. This finding is consistent with the findings of Abdkhodayi *et al.* [12], who showed that metacognitive beliefs have reduced academic procrastination in students, and the research by Mansourifar and Mohammed Kamal Abadi [13] in Minoodasht showing that metacognitive beliefs have reduced academic procrastination in students significantly. Moreover, the results are consistent with the findings of the study by Ranjbar [14] showing that self-management strategies are effective in reducing students' academic procrastination. Valizadeh *et al.* [4] showing that self-efficacy and self-regulation strategies have been effective in reducing procrastination of students, and Askari Firouzjaji [3] showing that metacognitive self-regulation strategy, time management, study environment, and strive for self-regulation significantly predicted academic procrastination.

In explaining the above result, Kim [15] argues that the people have the sharpest decline of motivation when they feel they have no control over the environment, and their behavior cannot cause any changes in the environment and motivation is partly due to the belief that people are able control the environment. People usually are working to increase their control over life. Moreover, cognitive approaches emphasize the role of irrational beliefs and unrealistic expectations in procrastination, but they cannot explain the mechanism of the quality of such beliefs on cognitive processes of procrastination [16, 17].

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REFERENCES

1. Atkinson and Hilgard. (2013). Psychology (translated by Mehdi Ganji), Tehran: Savalan
2. Attarkhameh, F, Seif A.A (2009) Meta study on the effect of teaching the learning motivation and academic achievement of students. Tehran, research is a study of Educational Psychology, No. (9)
3. Askari Firouzjaji, F. (2015) Predicting academic procrastination based on academic self-regulation, the second National Conference on Sustainable Development in Psychology, Social and Cultural Studies
4. Valizadeh, Z. Ahadi, H. Heydari, M. Mazaheri, M.M. Kajbaf, M.B, (2014) .Predicting Academic Procrastination Based on cognitive factors, emotional, motivational and Gender, Knowledge and Research in Psychology Applied episode 15, Number 57, fall 2014, pp. 100-92.

5. Fouladchang, M. (2005) the effect of metacognition training on math achievement, *Journal of Cognitive initiatives*, 14, 4, pp. 162-149.
6. Wells, A. (2013) *A practical guide to meta-cognitive therapy of anxiety and depression* (translation Shahram Mohammad Khani), Tehran.
7. Davoudian, Z. (2008). The effect of meta-cognitive strategy instruction on reducing test anxiety and academic achievement of girls in high schools of Ilam, a Master's thesis, Faculty of Psychology and Educational Sciences, Allameh Tabatabaei University
8. Solomon, L., and Rothblum, E.(1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, 31, 503-509.
9. Motii, H, Heidari, M. Sadeghi, M.A (2012) Predicting academic procrastination based on the elements of self-regulation in the first grade of high school students in Tehran, *Journal of Educational Psychology*, Issue 24, Summer 2012, pp. 70-49
10. Nikbakht, E, Abdkhodayi, Muhammad, S. Hassan Abadi, H (2013) The efficiency of reality therapy on increasing students' motivation and reducing procrastination, poor valid clinical research and advice, *Ferdowsi University of Mashhad Volume 3, Number 2* , autumn and winter of 2013.
11. Jokar, B Delavarpoor, M. (2007) Procrastination relationship with achievement goals, *Journal of New Thoughts on Education*, 3 (43), pp. 80-61
12. Abdkhodayi, M. Fatehi, Y. Eslamiyan, H (2011) Characterization of the authors predict academic procrastination with regard to students' metacognition, the first national conference on cognitive science in education.
13. Mansourifar, J. Mohammed Kamal Abadi, N (2015) the effect of metacognitive strategies on students' academic procrastination (Case Study: city Minoodasht) *International Conference on*
14. Ranjbar, Z. (2014) Predicting mediating role of academic procrastination based on five factors of personality and self-management strategies, master's thesis Yasouj University, Faculty of Literature and Humanities managerial economics and social sciences.
15. Kim, J. (1983). "College students apparel impulse buying behavior in relation to visual Merchandising", Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree Master of Science.
16. Lay, C. H. (1992). Trait procrastination and the perception of person-task characteristics. *Journal of Social Behavior and Personality*, 7, 483-494.
17. Nazari, J. (2010), sociology quality of life, emissions sociologists.pp90.

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